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10CFR 50.73

January 20, 2005

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Peach Bottom Atomic Power Station (PBAPS) Unit 2
Facility Operating License No. DPR-44
NRC Docket No. 50-277

Subject: Licensee Event Report (LER) 2-04-03

This LER reports an automatic scram as a result of a Primary Containment Group I isolation on low Reactor steam pressure. In accordance with NEI 99-04, the regulatory commitment contained in this correspondence is to restore compliance with the regulations. The specific methods that are planned to restore and maintain compliance are discussed in the LER. If you have any questions or require additional information, please do not hesitate to contact us.

Sincerely,

JPG

Joseph P. Grimes
Plant Manager
Peach Bottom Atomic Power Station

JPG/jrd/CR 285024

Attachment

cc: PSE&G, Financial Controls and Co-owner Affairs
R. R. Janati, Commonwealth of Pennsylvania
INPO Records Center
S. J. Collins, US NRC, Administrator, Region I
R. I. McLean, State of Maryland
F. L. Bower, USNRC Senior Resident Inspector

CCN 05-14003

IE22

NRC FORM 366 (6-2004) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 06/30/2007

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Peach Bottom Atomic Power Station (PBAPS)	05000 277	1 OF 3

4. TITLE

Automatic Scram due to an Electro-Hydraulic Control System Malfunction

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
12	22	2004	4	- 03 -	0	1	20	2005	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE

1

10. POWER LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify In Abstract below or In NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMBER (Include Area Code)
PBAPS Unit 2, James Mallon, Regulatory Assurance	717-456-3351

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
B	IT	ECBD	725N	Y					

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT *(Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)*

On 12/22/04 at approximately 0455 hours, a Unit 2 Reactor scram occurred as a result of a Primary Containment Isolation System (PCIS) Group I isolation. The Group I PCIS isolation was a result of low main steam line pressure caused by the opening of Main Turbine Bypass Valves due to an Electro-Hydraulic Control (EHC) circuit malfunction. The PCIS Group I isolation resulted in the closure of the Main Steam Isolation Valves (MSIVs). As would be expected for a PCIS Group I isolation, Reactor water level decreased to the Level 2 set point resulting in the actuation of the High Pressure Coolant Injection (HPCI), Reactor Core Isolation Cooling (RCIC) and the Alternate Rod Injection (ARI) / Recirculation Pump Trip systems. PCIS Group II and III isolations also occurred as Reactor water level passed through the Level 3 set point.

The cause of the EHC system malfunction was due to a failed 'A' Pressure Regulator circuit card. The card was found to have a manufacturing defect involving excess solder. The defective card was replaced and the EHC system tested to verify proper operation. The EHC system was placed in service and has been appropriately controlling Reactor pressure since this event. Similar installed circuit cards on Unit 2 were inspected and no similar solder deficiencies were observed. Additional evaluations and corrective actions are being performed in accordance with the corrective action program.

This event was not considered to be risk significant.

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Peach Bottom Atomic Power Station, Unit 2	05000277	04	- 03	- 00	2 OF 3

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Unit Conditions Prior to the Event

Unit 2 was in Mode 1 and operating at 100% rated thermal power. There were no structures, systems or components out of service that contributed to this event.

Description of the Event

On 12/22/04 at approximately 0455 hours, a Unit 2 Reactor scram occurred as a result of a Primary Containment Isolation System (PCIS) (EIIS: JM) Group I isolation. The Group I PCIS isolation was a result of low main steam line pressure caused by the opening of Main Turbine Bypass Valves (BPVs) (EIIS: SO) due to an Electro-Hydraulic Control (EHC) (EIIS: TG) circuit malfunction.

The PCIS Group I isolation resulted in the closure of the Main Steam Isolation Valves (MSIVs). As would be expected for a PCIS Group I isolation, Reactor water level decreased to the Level 2 set point resulting in the actuation of the High Pressure Coolant Injection (HPCI), Reactor Core Isolation Cooling (RCIC) and the Alternate Rod Insertion (ARI) / Recirculation Pump Trip systems. PCIS Group II and III isolations also occurred as Reactor water level passed through the Level 3 set point. The PCIS Group II and III isolations resulted in the closure of valves in various systems including the Reactor Building Ventilation system, the Containment Atmospheric Control / Containment Atmospheric Dilution systems, the Reactor Water Cleanup sytems and other containment penetrating process lines. The Standby-Gas Treatment system also actuated as expected on the Group III PCIS isolation. There were no significant anomalies involved with the plant equipment response to the event.

Just prior to the Reactor scram, Shift Operations personnel promptly observed the start of the sequential opening of Main Turbine Bypass Valves resulting from the EHC malfunction. Shift Supervisory personnel promptly directed a manual Reactor scram. However, the plant automatically scrammed prior to being able to take the manual actions.

The PCIS Group II and III isolations were initially reset by approximately 0530 hours. The scram and ARI initiation were reset by approximately 0540 hours. The PCIS Group I isolation was reset by approximately 0750 hours.

As required by 10CFR 50.72, NRC prompt notifications were completed on 12/22/04 at approximately 0808 hours to report the automatic scram, HPCI / RCIC actuations and the PCIS isolations.

This report is being submitted pursuant to 10CFR50.73 (a)(2)(iv)(A) due to valid actuations of the Reactor Protection System, the Primary Containment Isolation System, the HPCI System, and the RCIC System.

Analysis of the Event

There were no actual safety consequences as a result of this event.

All control rods inserted on the reactor scram signal. The Group I / II / III PCIS isolations resulted in the primary containment isolation safety function being met.

The HPCI, RCIC, ARI and Recirculation Pump Trip functions operated as designed with no concerns noted. HPCI, RCIC and Safety Relief Valves were operated for Reactor pressure and level control.

This event is bounded by the design basis event entitled, 'Pressure Regulator Failure'. During this event the plant safety systems responded as necessary. This event did not involve operations that exceeded the design basis.

This event was not considered to be risk significant.

NRC FORM 366AU.S. NUCLEAR REGULATORY COMMISSION
(1-2001)

LICENSEE EVENT REPORT (LER)

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Peach Bottom Atomic Power Station, Unit 2	05000277	04	- 03 -	00	3 OF 3

NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)* **(17)**

Cause of the Event

The cause of the EHC system malfunction is due to a failed 'A' Pressure Regulator circuit card (EIIS: IT). This circuit card is supplied by Mechanical Dynamics & Analysis (formerly Nova-Tech Corporation), Part No. 99041P1.

Initial troubleshooting was performed on the failed circuit card. The card was found to have low voltage at the 'decrease' input pin. The voltage observed at this pin would cause the control system malfunction symptoms observed and would also adversely affect the 'B' Pressure Regulator from being able to control Reactor pressure.

Detailed failure analyses were performed on the failed circuit card. The card was found to have a manufacturing defect involving excess solder. The excess solder on the circuit card created a short across two traces on the card, causing a voltage drop on the card. Removal of the excess solder resulted in proper card operation.

This card was installed in the EHC system on 9/18/04 during the recent Unit 2 refueling outage. The previously installed card could not be properly calibrated while performing preventive maintenance on the EHC system during the refueling outage. The previous that could not be calibrated had failed in a different manner (I.e. the set point was not able to be raised above 150 psig).

Corrective Actions

The defective card was replaced and the EHC system tested to verify proper operation. The EHC system was placed in service and has been appropriately controlling Reactor pressure since this event.

Similar installed circuit cards on Unit 2 were inspected and no similar solder deficiencies were observed. Additional evaluations and corrective actions are being performed in accordance with the corrective action program.

Previous Similar Occurrences

There was a previous Unit 2 scram on 12/21/02 caused by an EHC circuit card malfunction reported in LER 2-02-01. The failed circuit card was supplied by a different manufacturer and involved failure of a different type of sub-component (i.e. Operational Amplifier). Corrective actions resulting from the event reported in LER 2-02-01 included assessments of circuit cards potentially involving similar Operational Amplifier components.